V. Conservation & Resources Chapter

The Conservation & Resources Chapter includes the Elements: *Environment* (including Air, Noise, Ambient Temperature, and Energy Resources), *Land* and *Water*. These Elements provide goals and objectives, and identify policies and programs for air quality, energy use and conservation, land reclamation, wildlife management, water supply and demand, flood control, pollution protection and natural resource management associated with development and land use. The overall goal of this chapter is to balance needs of the current community while ensuring adequate resources for future development and future generations.

Photos related to this chapter

Chapter Tab Page

Back Side

~~4.~~ *Environment Element*

~~The Environment Element addresses different regional issues: air quality, noise pollution, ambient air temperatures and energy resources. Although policies and programs implemented by Tempe cannot change the problems created by the region, our approach to the issues will contribute toward improving the overall quality of life in the region.~~

Photos related to this element

Element Tab Page

Element Tab Page

Back Side

Element Tab Page

Element Tab Page

~~A.~~ *Environment Element*

The Environment Element addresses different regional issues: air quality, noise pollution, ambient air temperatures and energy resources. Although policies and programs implemented by Tempe cannot change the problems created by the region, our approach to the issues will contribute toward improving the overall quality of life in the region.

~~1.~~ *Air Quality*

Air quality is a challenging regional environmental issue that affects public health, quality of life and the local economy. Sources of air pollution include dust, pollen and other breathable particles, oil and gas burning engines, propellants and some manufacturing processes.

The federal Clean Air Act (CAA) directs the Environmental Protection Agency (EPA) to establish ambient air quality standards for six pollutants: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter (PM) and Sulfur Dioxide. The Environmental Protection Agency ~~-~~(EPA) determines if a geographical area meets federal standards for specific air pollutants. ~~;~~ ~~i~~If the federal standards have not been met for a specific pollutant, the area is considered to be a non-attainment area for that pollutant. The CAA also requires each state to ~~implement~~ create an EPA approved State Implementation Plan that demonstrates how and when they will achieve the federal air quality standards. Failure to obtain an approved plan or to reach the goals set forth in the plan could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. Communities must work together to achieve these regional goals and maintain federal funding sources.

Emissions from mobile sources (motor vehicles) are the primary source of Carbon Monoxide, Ozone Precursors and Nitrogen Dioxide. These pollutants are the cause of 70-90~~%~~ percent of the Valley~~-~~'s air pollution. Sulfur Dioxide is primarily generated from diesel burning engines and Lead primarily from leaded gasoline. As of 2002, Maricopa County is currently in attainment for these five pollutants, meaning that the federal air quality standards are being met. In the General Plan 2030 survey, 41~~%~~ percent of respondents said their top environmental concern was air quality. Tempe residents are committed to addressing their top environmental concern through the voter approved transit tax, and continued community support for alternative modes of transportation.

Tempe is located in a non-attainment area for Particulate Matter larger than 10 microns (PM10). PM10 is generated from dust and pollen and is abundant in the desert southwest where it can cause or contribute to respiratory problems and the "Brown Cloud" frequently seen over the Valley~~-~~. Tempe has adopted the control ordinances as recommended by Maricopa Association of Governments (MAG). The Maricopa region has committed to EPA that the PM10 standard will be met by December 31, 2006. As of 2002, the air quality standards for PM10 are not being met. Our region must meet the federal standards for a period of ~~3~~three years to be categorized as "in-attainment" or risk losing federal funding for various projects.

The goal of the Air Quality Element is to improve regional air quality through regulatory compliance and local policies and programs that minimize or mitigate the impacts of air pollution.

Objectives

- Meet or exceed air quality regulations
- Reduce the number of vehicle miles traveled
- Include citizens in the efforts to reduce air pollutants
- Reduce pollen impacts
- Create incentives, ordinances and procedures to minimize PM10

Strategies

- Develop a Comprehensive Environmental Quality Plan to address air quality issues in the context of other environmental issues and department functions
- Encourage open lot stabilization and continue dust control requirements for vacant and developed lots and construction projects
- Continue the Fireplace Emissions Ordinance
- Continue to participate in the County no burn day designations
- Provide information regarding fireplace contributions to air quality problems
- Provide information regarding plant allergens and alternative landscape treatments
- Continue the High Pollution Advisory program
- Maintain the smoking car hotline on the Tempe web site
- Reduce the number of vehicle miles traveled
- Promote the use of alternative fuels
- Encourage transit oriented and mixed-use development
- Encourage residents and visitors to use transit
- Continue ~~the~~ a no-smoking ordinance for indoor air quality
- Stay informed about research and technologies to improve air quality
- Inform citizens about Tempe's air quality status and provide community outreach
- Collaborate with other organizations to achieve shared air quality goals
- Maintain and enforce the landscape ordinance
- Consider additional policies and programs to mitigate air pollution
- Work regionally to promote pollen sensitive landscape treatment

~~2.~~ *Noise*

Like many urban communities, Tempe has many sources of noise such as aircraft, trains, automobiles, and certain activities that may be nuisances. Noise is unwanted sound which unreasonably intrudes on daily activities, and may impact stress levels, abilities to concentrate or learn, outdoor recreational amenities and vibration or noise sensitive technology. Increased regional population and demands for services and infrastructure may increase noise impacts within Tempe.

The goal of the Noise Element is to provide living, working and learning environments free from nuisance noises that affect comfort, productivity, and the enjoyment of indoor and outdoor environments.

Objectives

- Manage noise impacts
- Promote noise mitigation and monitoring regionally to protect Valley~~-~~wide quality of life

Strategies

- Develop a Comprehensive Environmental Quality Plan to address noise issues in the context of other environmental issues and department functions
- Maintain and enforce the noise ordinance
- Develop additional policies and programs to mitigate noise
- Promote land use and building design buffers that mitigate noise
- Identify nuisance noise issues and possible mitigation methods
- Follow technology research for improved noise mitigation
- Track noise impacts and complaints to assist in identifying problems and prioritizing changes
- Monitor noise in specific areas for different noise types to assist in identifying problems and prioritizing changes
- Partner with adjacent communities to promote regional reliever airports
- Work with regional and state agencies to reduce noise
- Work with Phoenix Sky Harbor International Airport to mitigate aircraft noise within Tempe
- Maintain the Tempe Aviation Commission (TAVCO)
- Provide information on noise issues
- Develop design guidelines for street development ~~a~~ that helps minimize road noise
- Consider transportation policies which mitigate noise in sensitive areas
- Consider a sound improvement program for all residents within noise impacted areas, regardless of occupancy or housing type.

Sources

- See references under the Aviation Element
- Noise Ordinance
- Nuisance Ordinance
- Phoenix Sky Harbor International F.A.R. Part 150 Noise Compatibility Study
- Intergovernmental Agreement on Noise Mitigation Flight Procedures between City of Tempe and City of Phoenix

~~3.~~ *Ambient Temperature*

Tempe has developed from an agricultural area to an urban community surrounded by other communities. This evolution has resulted in a loss of irrigated open space, increased building mass, increased asphalt and concrete. Heat islands occur where heat builds up and natural cooling no longer occurs. Ambient temperatures impact the use of outdoor space and exacerbate the energy consumption to maintain comfort, thus further contributing to heat gain.

The goal of the Ambient Temperature Element is to minimize heat island impacts to maintain a comfortable year-round outdoor environment and reduce energy consumption.

Objectives

- Maintain or reduce ambient temperatures in Tempe
- Promote temperature monitoring and mitigation regionally

Strategies

- Develop a Comprehensive Environmental Quality Plan to address ambient temperature issues in the context of other environmental issues and department functions
- Develop design standards to conserve energy, provide outdoor shade and reduce heat massing
- Develop additional policies and programs to mitigate heat islands
- Incorporate landscape strategies to reduce heat reflection and massing
- Follow technology research about ambient temperatures and energy efficiency
- Partner with adjacent communities to promote regional solutions to ambient temperature increases
- Provide information regarding heat islands and temperature reduction policies and programs
- Encourage developments to use latest technologies and design methods to minimize impacts on ambient temperature.

~~4.~~ *Energy Resources*

The Energy Element addresses multiple energy issues, such as renewable energy, solar access, alternative fuels, energy consumption and conservation, and sustaining reliable and affordable energy supplies for future community needs. Increased population may lead to increased energy consumption~~., however,~~ ~~e~~Energy efficiency ~~is~~may be maximized in densely developed communities through the use of alternative modes of transportation, shared living structures and ~~M~~mixed-~~U~~use developments that promote live, work and play in the same area. Currently, Tempe is served by two private electric companies and one private natural gas company. Local energy generation and transmission serves not only Tempe, but also the greater metropolitan area.

Solar access is the right of properties to receive sunlight, and not be shaded by adjacent property structures. Solar access is important for use of solar technology, outdoor activities, health and warmth. Equally important is shade, for energy efficiency and seasonal comfort. The developed height within the majority of Tempe is horizontal, one to two stories, with the tallest buildings located primarily in Downtown Tempe. Staggered building heights prevent sun blockage from any one area. Using low-~~-~~water-~~-~~using and native tree species that are not as tall or densely leafed as other species, minimizes solar blockage to adjacent parcels, and provides pedestrian level shade. Deciduous trees provide seasonal shade and sun. Tall walls used for security or sound barriers can become solar blocks: special consideration should be given to these areas to address solar access. In a desert climate, seasonal energy needs should be balanced between solar access and shade.

Alternative fuels are those which do not rely on fossil fuel to produce energy, such as passive and active solar, hydrogen and wind. Currently, programs offered by utility companies provide consumers with options that support research and development of alternative fuels. This research may provide future power supply beyond current technology and resource capabilities. Partnerships with utility companies and Arizona State University may create a unique position for Tempe with regards to this research and development.

The goal of the Energy Element is to sustain reliable and efficient energy sources while minimizing energy consumption of non-renewable sources.

Objectives

- Promote programs that reduce the use of non-renewable fuels and materials
- Reduce energy consumption in Tempe and sustain energy sources for future use

~~Protect Valley-wide energy sources~~

- Encourage energy and resource conservation as part of all developments

Strategies

- Develop a Comprehensive Environmental Quality Plan to address energy issues in the context of other environmental issues and department functions
- Encourage energy conservation through information sharing and financial incentives
- Provide information regarding energy consumption and conservation policies and programs
- Follow research and technology for alternative energy sources such as solar, hydrogen and biological fuels
- Include energy and resource conservation as a part of affordable housing strategies, by creating housing that is affordable to maintain and operate
- Use technology in municipal facilities to maximize energy efficiency and alternative fuels and renewable fuel sources
- Use the Quality Initiative for Buildings (QIB) for all municipal projects

- Develop viable energy conservation codes and ordinances
- ~~Continue~~ Expand use of solar technology in city facilities
- Encourage use of alternative modes of transportation
- Convert a portion of municipal vehicles to alternative fuels
- Encourage businesses to convert to alternative fuels
- Work with adjacent communities to develop a regional regulated traffic control system
- Promote energy conservation through passive and sustainable principles

~~C.~~ *Land Element*

~~The Land Element addresses three different regional issues: brownfield development, wildlife management, and habitat management. These issues impact public health, safety and welfare and the overall quality of life~~

Photos related to element

Element Tab Page

Element Tab Page

Back Side

Element Tab Page

Element Tab Page

~~C.~~ Land Element

The Land Element addresses three different regional issues: brownfield development, habitat management and solid waste management. These issues impact public health, safety and welfare and the overall quality of life

~~1.~~ Remediation

The Remediation Element addresses Superfund and ~~B~~brownfield development, identifies policies and programs to encourage redevelopment of blighted areas, and identifies prevention policies for maintaining existing clean land.

The goal of the Remediation Element is to redevelop sites with real or perceived environmental contamination to achieve the best land uses for the community.

Brownfields are abandoned, unused, or under-used industrial and commercial sites, where expansion or redevelopment is complicated by real or perceived environmental contamination. Examples of brownfields include abandoned gas stations, landfills, dry cleaners, car repair shops, and former industrial operations. These properties are not being cleaned up and redeveloped because of the uncertainty of environmental conditions, the risks associated with environmental liability, the high cost of cleanup, the longer timeframe needed for completion, and the higher cost of capital for development.

~~"~~Superfund sites~~"~~ are sites federally recognized as contaminated by one or more sources and qualify~~ing~~ for federal funding. The U.S. Environmental Protection Agency (EPA) in cooperation with individual state and tribal governments, administers the Superfund Program. The Superfund Program locates, investigates and cleans up certain hazardous waste sites throughout the United States. The Superfund ~~t~~Trust ~~f~~Fund was set up to help pay for the cleanup of these sites. The money comes mainly from taxes on the chemical and petroleum industries. The ~~trust~~ fund is used primarily when the companies or people responsible for contamination at Superfund sites cannot be found, or cannot perform or pay for the cleanup work. Tempe has two designated Superfunds.

Brownfields and Superfunds are a resource and challenge for the ~~C~~city. They are a resource because their redevelopment contributes to community revitalization by cleaning up and creating use of blighted, contaminated properties; creating jobs; bringing services to the community; and generating tax revenues. These sites are a challenge because they may pose a risk to public health, waste expensive infrastructure, have unknown environmental conditions and liability, and may have high cleanup costs. Brownfields should be seen as an opportunity to improve the ~~C~~city as a whole. Site redevelopment can provide the ~~C~~city with an opportunity to build its tax base, and revitalize decaying infrastructure and depressed areas that may exist within the vicinity of a brownfield.

Objectives

- Recommend land-use actions that promote restoration and more efficient use of ~~B~~brownfields

Strategies

- Develop a Comprehensive Environmental Quality Plan to address land issues in the context of other environmental issues and department functions
- Create and implement general guidelines for identifying and redeveloping brownfield areas
- Promote programs to help return brownfields to productive use
- Coordinate and work with other state and federal agencies concerning proper handling and redevelopment techniques for brownfields

~~2.~~ *Habitat Management*

The Habitat Management Element addresses how Tempe manages an urban environment for public health and safety, with regards to native and non-native animals residing within the community to encourage environments that promote native species survival within an urban context. For the purposes of this document, wildlife refers to any bird, mammal, reptile or insect using or potentially using an area.

The goal of the Habitat Management Element is to provide a safe urban environment for the healthy coexistence of humans and wildlife, to the greatest extent possible.

Objectives

- Identify existing and potential conditions that challenge habitat restoration
- Develop methods to mitigate public health, safety and welfare issues in the most humane and natural means possible
- Identify and monitor potential wildlife species in the area
- Communicate with interested organizations and contacts

Strategies

- Develop a Comprehensive Environmental Quality Plan to address wildlife issues in the context of other environmental issues and department functions
- Monitor areas for non-compatible wildlife, and work with consultants for mitigation
- Consult with nature groups for animal counts and habit patterns
- Provide public education about wildlife
- Prohibit feeding wildlife on public property
- Coordinate with agencies on wildlife sightings, requests for service, and issues concerning public health and safety
- Have Park Rangers monitor the park for target species
- Create a public reporting center to keep records of sightings
- Provide signs in parks identifying animals in the area
- Encourage and promote the use of native plants that attract and support urban wildlife~~Landscape and maintain plant materials to attract native low Sonoran Desert species~~
- Use landscape maintenance techniques to discourage feeding and flocking
- Coordinate with adjacent neighborhoods, developments and parks regarding wildlife issues
- Provide ~~paths~~ access for wildlife migration to lake edge and river bottom
- Participate in regional wildlife management meetings to address regional issues
- Update the Town Lake Wildlife Management Plan regularly
- Use technologies that discourage perching or roosting in certain areas
- ~~Use animals for biological insect control~~
- Encourage recreational use in appropriate areas
- Operate parks and lakes to minimize standing water
- Use animals and non-toxic technologies for ~~biological~~ insect control where possible
- Encourage the use of native plant species

Sources

- Town Lake Wildlife Management Plan

~~3.~~ *Solid Waste*

Solid waste addresses how Tempe manages an urban environment for public health and safety, with regards to solid waste and hazardous waste management and waste reduction.

The goal of the Solid Waste Element is to protect public health and safety through management and reduction of waste generated within the ~~C~~city.

Objectives

- Reduce the amount of solid waste sent to landfills
- Reduce hazardous waste impacts on landfills and water supplies
- Reduce municipal solid and hazardous waste

Strategies

- Develop a Comprehensive Environmental Quality Plan to address solid waste issues in the context of other environmental issues and department functions
- Continue the operation of the hazardous waste collection facility, and promote the use of this facility by residents
- Proactively monitor businesses for compliance, and creatively and expediently work to resolve non-compliance conditions
- Promote recycling in all residential areas, both single and multi-family
- Encourage businesses to recycle, and reduce packaging
- Educate the residents and businesses on the importance of recycling, not littering, and properly disposing of hazardous materials, including chemical, biological and pharmaceutical products

~~D.~~ *Water Element*

~~The Water Elements address water, wastewater and stormwater facilities, services and general policies. It identifies currently available surface water, groundwater and effluent supplies and demands and provides an overview of how projected demands based on growth and redevelopment will be adequately served through planning for future water requirements by legally and physically available or obtainable water supplies.~~

Photos related to this element

Element Tab Page

Map of Tempe Water facilities on back

Element Tab Page
Element Tab Page

~~D.~~ *Water Element*

The Water Element addresses water, wastewater and stormwater facilities, services and general policies. It identifies currently available surface water, groundwater and effluent supplies and demands and provides an overview of how projected demands based on growth and redevelopment will be adequately served through planning for future water requirements by legally and physically available or obtainable water supplies.

~~1.~~ *Water*

Tempe provides water and wastewater services to customers within the Tempe Water Service Area. The Tempe Water Service Area includes all lands within the City of Tempe as well as those within the Town of Guadalupe and several unincorporated county islands. The water service area covers about 42 square miles and is over 90~~%~~ percent developed. Drinking water delivered to Tempe customers is produced at two water treatment plants, the Martinez Water Treatment Plant and the South Tempe Water Treatment Plant. Both plants are currently rated to treat 50 million gallons of water per day (MGD), for a total surface water system treatment capacity of 100 MGD. The Tempe Water Utilities Department (WUD) also has eight groundwater wells that are used as a back-up drinking water source and several other groundwater wells used for irrigation purposes. ~~Figure 1~~ The map on page 162 shows the locations of these water production facilities in Tempe.

Tempe Water Supplies

The City of Tempe relies on renewable surface water supplies, effluent (reclaimed water), safe-yield groundwater supplies and surface water or reclaimed water that has been stored in groundwater aquifers. Renewable surface water sources make up more than 95~~%~~ percent of Tempe's annual water supply in an average year. These water supply sources include:

- Salt River Project (SRP) – Surface water delivered from storage in six SRP reservoirs on the Salt and Verde ~~R~~rivers, Class A Lands normal flow surface water deliveries, groundwater from SRP Wells
- Central Arizona Project (CAP) – Colorado River surface water delivered through the CAP system
- Modified Roosevelt Dam New Conservation Storage (NCS) – Water stored in the City of Tempe's additional conservation storage capacity created when Roosevelt Dam was enlarged in the mid-1990s
- Reclaimed Water (Effluent) – Reclaimed water produced at the Tempe Kyrene Reclamation Facility used for non-potable water uses
- Underground Storage Credits (Long Term Storage Credits) – CAP water or reclaimed water stored in aquifers for future use
- Groundwater – Safe yield groundwater allowance (incidental recharge factor component), Phase-in groundwater allowance

The City of Tempe received an Assured Water Supply Designation from the Arizona Department of Water Resources (ADWR) on December 31, 1997 (AWS 97-007, Decision and Order No. 26-002043). The Assured Water Supply Designation certifies that Tempe has demonstrated the physical, legal and continuous availability of groundwater, surface water, Central Arizona Project/Colorado River water and effluent in an aggregate volume sufficient to meet water demands for a minimum of 100 years. The designation is in effect through 2010, at which time Tempe must reapply for certification.

In its application for an Assured Water Supply (AWS) Designation from the Arizona Department of Water Resources, Tempe demonstrated the physical, legal and continuous availability of water supplies in an aggregate volume of 77,222 acre-feet per year for a minimum of 100 years. Total water demand in the Tempe Water Service Area in 2010 is projected to be approximately 70,462 acre-feet per year. Available water supplies are about 9~~%~~ percent to 10~~%~~ percent greater than the projected water demand for 2010.

The 1997 AWS Designation quantified Tempe's AWS sources as follows:

- Salt River Project (SRP stored water + Class A land normal flow) = 60,499 af/yr
- CAP (CAP Municipal and Industrial (M & I) subcontract) = 4,315 af/yr
- Other CAP (CAP water through settlements and assignments) = 204 af/yr
- Modified Roosevelt Dam NCS = 4,200 af/yr
- Effluent (reclaimed water from Kyrene Reclamation Facility) = 924 af/yr
- Safe-Yield Groundwater (incidental recharge allowance) = 2,685 to 3,108 af/yr
- Phase-in Groundwater allowance = 3,620 af/yr
- Existing Long Term Storage Credits = 352 af/yr
- Total Tempe AWS (all sources) = 77,222 af/yr

The goal of the Water Element ~~goal~~ is to provide the highest level of water ~~and wastewater~~ quality and service at the lowest possible cost for utility customers.

Objectives

- Rely on renewable and sustainable water supplies
- Provide drinking water that meets or exceeds all federal and state water quality standards
- Continue to provide the highest level of water services at the lowest possible cost
- Develop and acquire new renewable water supplies
- Maintain safe yield levels of groundwater use
- Maximize the direct reuse of reclaimed water for non-potable water uses
- Use groundwater recharge to store excess CAP water and reclaimed water for future use
- Maintain an effective water conservation program
- Integrate land use and water planning for proposed new and redeveloped sites

Strategies

- Develop a Comprehensive Environmental Quality Plan to address water issues in the context of other environmental issues and department functions
- Protect Tempe's rights to Salt River Project surface water supplies
- Fully utilize Tempe's CAP Municipal and Industrial (M & I) water allocation each year
- Maximize the use of Excess CAP Municipal and Industrial (M & I) contract water and reclaimed water for groundwater recharge storage projects and/or direct uses
- Increase recovery well capacity for backup water supply, prolonged drought protection and future recovery of long-term storage credits
- Establish planning guidelines that consider the water rights status of lands slated for development and redevelopment projects
- Work to secure a long-term lease(s) of CAP water from Arizona Indian Communities for future non-member land water demands
- Maintain a vigorous water quality sampling and analysis program
- Utilize new, cost-effective technology in water treatment
- Phase-in necessary water rate adjustments to minimize impacts on utility customers and to assure fair and equitable cost of service allocation across customer classifications
- Design cost-effective water treatment expansions on a per-unit treatment cost basis
- Use organizational development, including work force restructuring and skill based compensation
- Recommend the establishment of a water resources development fee for new development on non-SRP eligible land to cover the costs of securing additional non-member land water resources
- Limit the use of groundwater wells and the recovery of long-term storage credits from wells to back-up water supply conditions or drought conditions ~~when possible~~
- Implement new water conservation measures

- Increase customer participation in existing water conservation programs within the residential and commercial/industrial sectors, develop new water conservation programs
- Promote technologies and infrastructure which facilitiate the use of reclaimed water where appropriate
- Reduce the reliance on groundwater so that it may be preserved for use in times of severe drought

Sources

- Tempe Water Utilities Department (WUD) Water Resources Plan Update
- Tempe WUD Integrated Master Plan, Vol. II - Water Master Plan

~~2.~~ *Wastewater*

Tempe operates and maintains the wastewater collection sewer system in Tempe. Wastewater is treated at two wastewater treatment plants. Most of Tempe's wastewater is treated at the 91st Avenue Wastewater Treatment Plant (WWTP) in Phoenix. The 91st Avenue WWTP is operated by the City of Phoenix for the Sub-Regional Operating Group (SROG) partnership. The SROG partnership includes the Cities of Phoenix, Tempe, Mesa, Scottsdale and Glendale. Tempe owns 22.5 million gallons per day (MGD) of wastewater treatment capacity at the 91st Avenue WWTP. Tempe also owns and operates the Kyrene Reclamation Facility (KRF) in south Tempe. The KRF has the capacity to treat 4.5 MGD of wastewater. The major tri-city sewer line running through north Tempe was lined for structural support, gaining an estimated twenty years on the line before replacement and expansion will be necessary. Increases in development in south Scottsdale or east Mesa could impact the schedule for this line. Another potential impact on wastewater in Tempe, is possible expansion of ASU's main campus.

The goal of the Wastewater Element is to safely collect and treat all wastewater from residences and businesses within the City of Tempe and Town Of Guadalupe using the best available technology and most cost-effective means of treatment.

Objectives

- Utilize the best available technology and most cost effective means of wastewater collection and treatment
- Compliance with all regulatory permits
- Keep wastewater utility costs as low as possible for utility customers
- Maximize the reuse of reclaimed water for appropriate non-potable water uses

Strategies

- Develop a Comprehensive Environmental Quality Plan to address waste water issues in the context of other environmental issues and department functions.
- Monitor regulatory compliance for all wastewater permits
- Enforce the Tempe industrial wastewater pretreatment ordinance
- Perform regular sewer system maintenance and cleaning
- Implement a grease trap program
- Utilize new technology at wastewater treatment facilities
- Continue to ~~A~~actively participat~~ion~~ in regional wastewater treatment and effluent reuse planning
- Plan wastewater treatment expansions at existing facilities where the additional per-unit capital costs and wastewater treatment costs will be lowest
- Investigate new opportunities for wastewater treatment partnerships
- Phase-in any required wastewater rate increases to minimize impacts on ~~ratepayers~~ customers
- Maximize the beneficial reuse of treated effluent and reclaimed water for non-potable water uses to conserve surface water and groundwater supplies
- Store excess reclaimed water supplies in aquifers for future recovery and use

~~3.~~ *Stormwater*

The Tempe Water Utilities Department operates and maintains the stormwater collection and drainage system in Tempe. Tempe has an NPDES stormwater permit which requires Tempe to implement programs to control pollutants in stormwater that drain to lakes and rivers from areas within Tempe. New developments and redevelopments in Tempe are required to have on-site stormwater retention ~~on-site~~. Tempe prohibits non-stormwater discharges of pollutants into Tempe's storm drain system from private property as well as city-owned property. ASU is required to obtain a separate NPDES stormwater permit for their facilities. Most of north Tempe drains to the Indian Bend Wash and the Salt River. Stormwater that drains to the Salt River from the south bypasses the Tempe Town Lake to maintain water quality. In addition to on-site retention, Tempe relies on community retention facilities, which collect storm water from a larger drainage basin than the adjacent property. Some freeways drain to these facilities. Many of these facilities also serve as parks. The map on the adjacent page identifies community retention facilities.

The goal of the Stormwater Element is to minimize the load, or total volume, of pollutants that are carried to receiving water bodies, such as the Salt River, Tempe Town Lake or Tempe's other municipal lakes, in order to protect those water bodies for their designated uses.

Objectives

- Implement storm water pollution control measures to minimize, to the extent practicable, the discharge of pollutants to the State's water bodies from Tempe's storm drain system
- Maintain compliance with Tempe's NPDES permit by implementing structural and non-structural control measures to satisfy the terms of the permit

Strategies

- Develop a Comprehensive Environmental Quality Plan to address storm water issues in the context of other environmental issues and department functions.
- Utilize ~~B~~best management practices to reduce storm water pollutants
- Enforce~~ment of~~ ordinances prohibiting the discharge of non-storm water materials into the ~~C~~city's storm drain system
- Continue the ~~S~~storm drain inspection and maintenance program
- Continue the ~~S~~street sweeping program
- Minimize the introduction of pesticides, herbicides and fertilizers to storm water flows resulting from applications on ~~C~~city facilities

Sources

- City of Tempe Designation of Assured Water Supply
- Integrated Master Plan, Volume II – Water Master Plan
- Integrated Master Plan, Volume III – Wastewater Master Plan
- Integrated Master Plan, Volume IV – Stormwater Master Plan
- Tempe WUD Water Resources Plan Update, July 2002
- City of Tempe Ordinance # 94-21 - Adopting the 1991 Uniform Plumbing Code~~, limiting the flow rates on domestic and commercial fixtures~~
- City of Tempe Ordinance # 808.9803 - Landscaping restrictions on New Model Homes and new Non-Residential Development
- City of Tempe Resolution # 2001.49 - Adopting water fees rate structure
- City of Tempe Resolution # 2002.26 - Adopting the ADWR NPCCP Program
- City of Tempe Stormwater Management Plan

Stormwater retention map